CONTENTS 1985

JANUARY/FEBRUARY

1 **Idiopathic Scoliosis and the Central Nervous System: A Motor Control Problem. The Harrington Lecture, 1983 Scoliosis Research Society**
Richard Herman, James Mixon, Anne Fisher, Ruth Maulucci, and Joseph Stuyck

15 **Spine Duplication**
Anna Kelly, Richard Towbin, Robert Kaufman, and Alvin Crawford

19 **A Profile of Metastatic Carcinoma of the Spine**
James Schaberg and Barry J. Gainor

21 **Reconstructive Spinal Surgery as Palliation for Metastatic Malignancies of the Spine**
Ronald L. DeWald, Keith H. Bridwell, Chadwick Prodromas, and Mary F. Rodts

27 **Intraspinal Hemangiopericytomas: Report of Two Cases and Review of the Literature**
P. Ciappetta, P. Celli, L. Palma, and A. Mariottini

32 **The Evolution of Stability in Cervical Spinal Constructs Using Either Autogenous Bone Graft or Methylmethacrylate Cement: A Follow-Up Report on a Canine *In Vivo* Model**
Richard Whitehill and John C. Barry

42 **The Developmental Segmental Sagittal Diameter in Combined Cervical and Lumbar Spondylosis**
Walter C. Edwards and S. Henry LaRocca

50 **The Posterior Surface of the Lumbar Vertebral Bodies: Part 1**
Jon L. Larsen

59 **The Orientation of Laminae and Facet Joints in the Lower Lumbar Spine**
Jan P. J. Van Schaik, Henk Verbiest, and Frans D. J. Van Schaik

64 **Simultaneous Measurement of Intraosseous and Cerebrospinal Fluid Pressures in Lumbar Region**
Kenji Hanai, Kenichi Kawai, Yuzo Itoh, Toshimichi Satake, Fuminori Fujiyoshi, and Norio Abematsu

69 **Water and Electrolyte Content of Human Intervertebral Discs Under Variable Load**
J. Kraemer, D. Kolditz, and R. Gowin

72 **Redundant Nerve Roots in Patients with Degenerative Lumbar Spinal Stenosis**
Haruo Tsuji, Tetsuya Tamaki, Tatsuo Itoh, Hitoshi Yamada, Takashi Motoe, Shinichiro Tatezaki, Tetsuo Noguchi, and Haruo Takano

83 **Toward Standards for Posture: Postural Characteristics of the Lower Back System in Normal and Pathologic Conditions**
J. During, H. Goudfrooij, W. Keessen, Th. W. Beeker, and A. Crowe

88 **Symptoms and Signs of Sciatica and Their Relation to the Localization of the Lumbar Disc Herniation**
Pekka Kortelainen, Jaakko Puranen, Erkki Koivisto, and Seppo Lähde

93 **Dural Puncture Using the Lateral Approach for Chemonucleolysis**
Eugene J. Dabezies and Charles P. Murphy

97 **Epidurally Placed Free Fat Grafts Visualized by CT Scanning 15–18 Years after Discectomy**
Anders Langenskiöld and Matti Valle

99 **Briefly Noted: Paravertebral Marcaine in Postoperative Lumbar Laminectomy Pain Relief**
Glenn R. Rechtine

100 **Briefly Noted: Changing Trends in the Neurosurgical Management of Chronic Pain**
Joseph A. Epstein

102 **Briefly Noted: Spontaneous Atlantoaxial Fusion in Psoriaic Arthritis. A Case Report**
Robert B. Dzioba and James Benjamin

CONTENTS 1985

JANUARY/FEBRUARY

1 **Idiopathic Scoliosis and the Central Nervous System: A Motor Control Problem. The Harrington Lecture, 1983 Scoliosis Research Society**
Richard Herman, James Mixon, Anne Fisher, Ruth Maulucci, and Joseph Stuyck

15 **Spine Duplication**
Anna Kelly, Richard Towbin, Robert Kaufman, and Alvin Crawford

19 **A Profile of Metastatic Carcinoma of the Spine**
James Schaberg and Barry J. Gainor

21 **Reconstructive Spinal Surgery as Palliation for Metastatic Malignancies of the Spine**
Ronald L. DeWald, Keith H. Bridwell, Chadwick Prodromas, and Mary F. Rodts

27 **Intraspinal Hemangiopericytomas: Report of Two Cases and Review of the Literature**
P. Ciappetta, P. Celli, L. Palma, and A. Mariottini

32 **The Evolution of Stability in Cervical Spinal Constructs Using Either Autogenous Bone Graft or Methylmethacrylate Cement: A Follow-Up Report on a Canine *In Vivo* Model**
Richard Whitehill and John C. Barry

42 **The Developmental Segmental Sagittal Diameter in Combined Cervical and Lumbar Spondylosis**
Walter C. Edwards and S. Henry LaRocca

50 **The Posterior Surface of the Lumbar Vertebral Bodies: Part 1**
Jon L. Larsen

59 **The Orientation of Laminae and Facet Joints in the Lower Lumbar Spine**
Jan P. J. Van Schaik, Henk Verbiest, and Frans D. J. Van Schaik

64 **Simultaneous Measurement of Intraosseous and Cerebrospinal Fluid Pressures in Lumbar Region**
Kenji Hanai, Kenichi Kawai, Yuzo Itoh, Toshimichi Satake, Fuminori Fujiyoshi, and Norio Abematsu

69 **Water and Electrolyte Content of Human Intervertebral Discs Under Variable Load**
J. Kraemer, D. Kolditz, and R. Gowin

72 **Redundant Nerve Roots in Patients with Degenerative Lumbar Spinal Stenosis**
Haruo Tsuji, Tetsuya Tamaki, Tatsuo Itoh, Hitoshi Yamada, Takashi Motoe, Shinichiro Tatezaki, Tetsuo Noguchi, and Haruo Takano

83 **Toward Standards for Posture: Postural Characteristics of the Lower Back System in Normal and Pathologic Conditions**
J. During, H. Goudfrooij, W. Keessen, Th. W. Beeker, and A. Crowe

88 **Symptoms and Signs of Sciatica and Their Relation to the Localization of the Lumbar Disc Herniation**
Pekka Kortelainen, Jaakko Puranen, Erkki Koivisto, and Seppo Lähde

93 **Dural Puncture Using the Lateral Approach for Chemonucleolysis**
Eugene J. Dabezies and Charles P. Murphy

97 **Epidurally Placed Free Fat Grafts Visualized by CT Scanning 15–18 Years after Discectomy**
Anders Langenskiöld and Matti Valle

99 **Briefly Noted: Paravertebral Marcaine in Postoperative Lumbar Laminectomy Pain Relief**
Glenn R. Rechtine

100 **Briefly Noted: Changing Trends in the Neurosurgical Management of Chronic Pain**
Joseph A. Epstein

102 **Briefly Noted: Spontaneous Atlantoaxial Fusion in Psoriaic Arthritis. A Case Report**
Robert B. Dzioba and James Benjamin

104 Briefly Noted: Unusual Presentation of Spinal Osteomyelitis in a Patient Taking Propylthiouracil. A Case Report
M. Kornberg, G. R. Rechtine, and T. E. Dupuy
108 Briefly Noted: Delayed Vertebro-Basilar Insufficiency Following Cervical Spine Injury
Bikash Bose, Bruce E. Northrup, and Jewell L. Osterholm

MARCH
EUROPEAN EDITION

111 Unstable Thoracolumbar Fractures: A Comparative Clinical Study of Conservative Treatment and Harrington Instrumentation
J. Willén, S. Lindahl, and A. Nordwall
123 Anthropometric Data Relating to Normal and Scoliotic Scandinavian Girls
Helena Normelli, John Sevastik, Gudrun Ljung, Stig Aaro, and Anna-Maria Jönsson-Söderström
127 Long-Term Anatomic and Functional Changes in Patient with Adolescent Idiopathic Scoliosis Treated with the Milwaukee Brace
Thomas Cochran and Alf Nachemson
134 Acute Traumatic Intraosseous Disc Herniation
Iain W. McCall, William M. Park, John P. O'Brien, and Victor Seal
138 The Influence of Vertebral Body Fracture, Intradiscal Injection, and Partial Discectomy of the Radial Bulge and Height of Human Lumbar Discs
Paul Brinckmann and Manfred Horst
146 Sustained Lumbar Traction: An Experimental Study of Long Spine Segments
L. T. Twomey
150 The Effect of Low-Back Pain on Lumbar Spinal Movements Measured by Three-Dimensional X-Ray Analysis
Mark Pearcy, Ian Portek, and Janis Shepherd
154 The Lumbar Lordosis in Acute and Chronic Low-Back Pain
Tommy Hansson, Stanley Bigos, Patric Beecher, and Mark Wortley
156 Immunohistochemical Demonstration of Nociceptors in the Ligamentous Structures of the Lumbar Spine
Olli Korkala, Mats Grönblad, Päivi Liesi, and Erkki Karaharju
158 The Bone Mineral Content of the Lumbar Spine in Patients with Chronic Low-Back Pain
T. Hansson, J. Sandström, B. Roos, R. Jonson, and G. B. J. Andersson
161 Circadian Variation in Stature and the Effects of Spinal Loading
A. R. Tyrrell, T. Reilly, and J. D. G. Troup
165 Can Infant Malnutrition Cause Adult Vertebral Stenosis
George A. Clark, Manohar M. Panjabi, and F. Todd Wetzel
171 Myelography in the Elderly and the Diagnosis of Spinal Stenosis
A. Udén, K.-E. Johnsson, K. Jonsson, and H. Pettersson
175 Is There Instability in Spondylolisthesis?
Mark Pearcy and Janis Shepherd
178 The Comparative Biomechanical, Histologic, and Radiographic Analysis of Canine Lumbar Discs Treated by Surgical Excision or Chemonucleolysis
Neil Kahanovitz, Steven P. Arnoczky, and Frederick Kummer
184 Meetings of Interest for Spine Physicians and Surgeons

APRIL

187 Computed Axial Tomography in C1-C2 Trauma
Morris Baumgarten, William Mouradian, Donald Boger, and Robert Watkins
193 Cervical Cord Trauma: The Relationship Between Clinical Syndromes and Force of Injury
Richard B. Raynor and Bernard Koplik

198 Biomechanical Study of Cervical Spine Stabilization with Methylmethacrylate
Manohar M. Panjabi, Vijay K. Goel, Charles R. Clark, Kristaps J. Keggi, and Wayne O. Southwick
204 A Biomechanical Analysis of Spinal Instrumentation Systems in Thoracolumbar Fractures: Comparison of Traditional Harrington Distraction Instrumentation with Segmental Spinal Instrumentation
Paul C. McAfee, Frederick W. Werner, and Richard R. Glisson
218 Confirmation of the Posterolateral Technique to Decompress and Fuse Thoracolumbar Spine Burst Fractures
Steven R. Garfin, Carol A. Mowery, Jose Guerra, and Lawrence F. Marshall
224 The Surgical Treatment of Congenital Kyphosis: A Review of 94 Patients Age 5 Years or Older, with 2 Years or More Follow-Up in 77 Patients
R. B. Winter, J. H. Moe, and J. E. Lonstein
232 Pain Due to Nerve Injury
John D. Loeser
236 Radiographic Measurement of the Lumbar Spine: A Clinical and Experimental Study in Man
Helena Saraste, L-Å. Broström, Tomas Aparisi, and Gabriella Axdorph
242 Chymodiactin® in Patients with Herniated Lumbar Intervertebral Disc(s): An Open-Label, Multicenter Study
Daniel J. McDermott, Karl Agre, Marlene Brim, Frank Demma, Janice Nelson, Richard R. Wilson, and Ronald A. Thisted
250 Pars Interarticularis Fusion of Multiple Levels of Lumbar Spondylolysis: A Case Report
David Eingorn and Peter D. Pizzutillo
253 Symposium: Instability of the Lumbar Spine
254 Presidential Symposium on Instability of the Lumbar Spine: Introduction
W. H. Kirkaldy-Willis
255 Biomechanical Definitions of Spinal Instability
Malcolm H. Pope and Manohar Panjabi
257 Centrode Patterns and Segmental Instability in Degenerative Disc Disease
S. D. Gertzbein, J. Seligman, R. Holtby, K. H. Chan, A. Kapasouri, M. Tile, and B. Cruickshank
262 Radiologic Diagnosis of Degenerative Lumbar Spinal Instability
Pierre R. Dupuis, Ken Yong-Hing, J. David Cassidy, and William H. Kirkaldy-Willis
277 Physical Signs of Instability
Stanley V. Paris
280 Segmental Instability: Rationale for Treatment
J. W. Frymoyer and D. K. Selby
287 Degenerative Spondylolisthesis: To Fuse or Not to Fuse
Henry L. Feffer, Sam W. Wiesel, John M. Cuckler, and Richard H. Rothman
290 Lumbar Spine Instability: A Critical Update and Symposium Summary
Alf Nachemson
292 Letters
294 Meetings of Interest for Spine Physicians and Surgeons
296 Information for Authors

MAY

297 Effects of Hydrocortisone on the Vertebral Cartilage Plate in Mice: A Light and Electron Microscopic Study
Masanori Higuchi and Kazuhiro Abe
303 Primary Amyloidoma of the Spine: A Case Report and Review of the Literature
Mark C. Leeson, Glenn R. Rechtine, John T. Makley, and John R. Carter
307 Surgical Reconstruction of Late Post-Traumatic Thoracolumbar Kyphosis
James R. Roberson and Thomas E. Whitesides, Jr.

313 An Analysis of Failed Harrington Rods
Stephen D. Cook, Robert L. Barrack, Frederick S. Georgette, Thomas S. Whitecloud III, Stephen W. Burke, Harry B. Skinner, and Eric A. Renz
317 The Abdominal Mechanism
S. Gracovetsky, H. Farfan, and C. Helleur
325 A Review of Camptocormia and an Unusual Case in the Female
James C. Rosen and John W. Frymoyer
328 Quantitative Assessment of the Fifth Lumbar Spinal Canal by Computed Tomography in Symptomatic L4-L5 Disc Disease
Markus Kornberg and Glenn R. Rechtine
331 Computed Tomography of Lumbosacral Conjoined Nerve Root Anomalies: Potential Cause of False-Positive Reading for Herniated Nucleus Pulposus
Robert G. Peyster, J. George Teplick, and Marvin E. Haskin
338 Somatosensory Evoked Potentials as an Aid in the Diagnosis and Intraoperative Management of Spinal Stenosis
Hugo A. Keim, Michael Hajdu, Erwin G. Gonzalez, Leonard Brand, and Easwaran Balasubramanian
345 Baclofen for the Treatment of Acute Low-Back Syndrome: A Double-Blind Comparison with Placebo
Frances Dapas, Stanford F. Hartman, Lucas Martinez, B. E. Northrup, R. Theodore Nussdorf, Harold M. Silberman, and Howard Gross
350 The Use of Mechanical Etiology to Determine the Efficacy of Active Intervention in Single Joint Lumbar Intervertebral Joint Problems: Surgery and Chemonucleolysis Compared: A Prospective Study
H. F. Farfan
359 Paraplegia Following Chemonucleolysis: A Case Report and Discussion of Neurotoxicity
Peter Dyck
363 Cost Effectiveness of Chemonucleolysis Versus Laminectomy in the Treatment of Herniated Nucleus Pulposus
Lincoln F. Ramirez and Manucher J. Javid
368 Stereophotogrammetry of the Lumbar Spine: A Technique for the Detection of Pseudarthrosis
James Morris, Neil Chafetz, Sheldon Baumrind, Harry Genant, and Edward L. Korn
376 Technique for Achievement and Maintenance of Reduction for Severe Spondylolisthesis Using Spinous Process Traction Wiring and External Fixation of the Pelvis
Richard A. Balderston and David S. Bradford
383 Distraction Rod Instrumentation with Posterolateral Fusion in Isthmic Spondylolisthesis: 53 Cases Followed for 18–89 Months
Kiyoshi Kaneda, Shigenobu Satoh, Yutaka Nohara, and Tadanori Oguma
390 Briefly Noted: Aneurysmal Bone Cyst of the Spine. A Case Report
Leslie Schaffer, Leonard I. Kranzler, and Edir B. Siqueira
393 Briefly Noted: Delayed Overdistraction of a Surgically Treated Unstable Thoracolumbar Fracture. A Case Report
P. W. Esposito, A. H. Alexander, and D. M. Lichtman
396 Briefly Noted: Osteoid Osteoma of the Thoracic Spine with Surgical Decompression Aided by Somatosensory Evoked Potentials. A Case Report
E. Balasubramanian, Hugo A. Keim, and Michael Hajdu
398 Briefly Noted: Solitary Osteochondroma Occurring on the Transverse Process of the Lumbar Spine. A Case Report
Paul W. Esposito, Alvin H. Crawford, and Carole Vogler
401 Letters
404 Meetings of Interest for Spine Physicians and Surgeons
406 Information for Authors

JUNE
EUROPEAN EDITION

407 Spinal Cord Monitoring: Electrophysiological Measures of Sensory and Motor Function During Spinal Surgery
Musafumi Machida, Stuart L. Weinstein, Thoru Yamada, and Jun Kimura

414 Late Results of Harrington's Operation: Long-Term Evolution of the Lumbar Spine Below the Fused Segments
C. R. Michel and J. J. Lalain

421 Scoliosis at Less than 30°: Properties of Evolutivity (Risk of Progression)
G. Duval-Beaupère and Th. Lamireau

425 Standing and Supine Cobb Measures in Girls with Idiopathic Scoliosis
Gunnar Torell, Alf Nachemson, Karol Haderspeck-Grib, and Albert Schultz

428 Flexibility of Scoliosis: What Does It Mean? Is This Terminology Appropriate?
G. Duval-Beaupère, A. Lespargot, and A. Grossiord

433 Trunk Posture and Trapezius Muscle Load While Working in Standing, Supported-Standing, and Sitting Positions
Tom Bendix, Lisbeth Krohn, Flemming Jessen, and Arne Aarås

440 Low-Back Pain: Perception and Tolerance
Kazimierz Sedlak

445 The Relation of Spinal X-Ray to Low-Back Pain and Physical Activity among 60-Year-Old Men and Women
Fin Biering-Sørensen, Finn Rolsted Hansen, Marianne Schroll, and Orla Runeborg

452 Lumbar Intervertebral Disc Heights in Normal Subjects and Patients with Disc Herniation
S. B. Tibrewal and M. J. Pearcy

455 A Prospective Study of Lumbar Spinal Movements Before and After Discectomy Using Diplanar Radiography: Correlation of Clinical and Radiographic Findings
S. B. Tibrewal, M. J. Pearcy, I. Portek, and J. Spivey

461 Radiographic Measurements of Lumbar Spinal Canal Size and Their Relation to Back Mobility
H. Vanharanta, J. Korpi, M. Heliövaara, and J. D. G. Troup

467 Spinal and Pelvic Kinematics in Osteoarthrosis of the Hip Joint
A. J. Thurston

472 Spinal Movements in Ankylosing Spondylitis and the Effect of Treatment
M. J. Pearcy, B. P. Wordsworth, I. Portek, and A. G. Mowat

475 Briefly Noted: Injury to the Thoracic Spinal Cord by Glass Fragments. Case Report
Harald Müller, Mario Brock, Werner Pöll, and Thomas Fischer

478 Meetings of Interest for Spine Physicians and Surgeons

JULY/AUGUST
EUROPEAN EDITION

481 1985 Volvo Award Competition for Research in Low-Back Pain

482 1985 Volvo Award in Clinical Sciences: Objective Assessment of Spine Function Following Industrial Injury: A Prospective Study with Comparison Group and One-Year Follow-Up
Tom G. Mayer, Robert J. Gatchel, Nancy Kishino, Janice Keeley, Patricia Capra, Holly Mayer, Jim Barnett, and Vert Mooney

494 1985 Volvo Award in Biomechanics: Poroelastic Dynamic Structural Models of Rhesus Spinal Motion Segments
B. R. Simon, J. S. S. Wu, M. W. Carlton, L. E. Kazarian, E. P. France, J. H. Evans, and O. C. Zienkiewicz

508 1985 Volvo Award in Basic Science: The Intrinsic Vasculature of the Lumbosacral Spinal Nerve Roots
Wesley W. Parke and Ryo Watanabe
516 The Role of Lumbar Spinal Elements in Flexion
V. K. Goel, S. J. Fromknecht, K. Nishiyama, J. Weinstein, and Y. K. Liu
524 Gradual Disc Prolapse
M. A. Adams and W. C. Hutton
532 The Importance of Mechanical Factors in the Etiology of Spondylolysis: A Model Analysis of Loads and Stresses in the Human Lumbar Spine
Marek Dietrich and Pawel Kurowski
543 Kinematics of the Whole Lumbar Spine: Effect of Discectomy
V. K. Goel, S. Goyal, C. Clark, K. Nishiyama, and T. Nye
555 The Effects of Chemonucleolysis on the Mechanical Properties of the Canine Lumbar Disc
D. L. Spencer, J. A. A. Miller, and A. B. Schultz
562 Effects of Collagenase on Nerve Tissue: An Experimental Study on Acute and Long-Term Effects in Rabbits
Björn Rydevik, Mark D. Brown, Takuhiko Ehira, and Claes Nordborg
567 Outpatient Lumbar Myelography: Analysis of Complications After Myelography Comparing Outpatients with Inpatients
Franco Postacchini and Marco Massobrio
571 A Rationalized Approach to Physiotherapy for Low-Back Pain
J. M. Sikorski
580 A Biomechanical Study of Thoracolumbar Spinal Fractures With Bone in the Canal: Part I. The Effect of Laminectomy
Allan F. Tencer, Ben L. Allen, Jr., and Ron L. Ferguson
586 A Biomechanical Study of Thoracolumbar Spinal Fractures with Bone in the Canal: Part II. The Effect of Flexion Angulation, Distraction, and Shortening of the Motion Segment
Allan F. Tencer, Ron L. Ferguson, and Ben L. Allen, Jr.
590 The Length and Ash Weight of the Ribs of Normal and Scoliotic Persons
H. Normelli, J. Sevastik, and J. Akrivos
593 Letters
594 Meetings of Interest for Spine Physicians and Surgeons
596 Information for Authors

SEPTEMBER

597 Posterior Surgical Stabilization for Atlantoaxial Subluxation in Rheumatoid Arthritis
Roby C. Thompson, Jr. and Thomas J. Meyer
602 Atlantoaxial Rotatory Fixation: Radiographic Study of Its Mechanism
Keiro Ono, Kazuo Yonenobu, Takeshi Fuji, and Kozo Okada
609 Spinal Deformities in Patients with Arthrogryposis: A Review of 16 Patients
Youssef H. Daher, John E. Lonstein, Robert B. Winter, and John H. Moe
614 Spinal Deformities in Patients with Muscular Dystrophy Other Than Duchenne: A Review of 11 Patients Having Surgical Treatment
Youssef H. Daher, John E. Lonstein, Robert B. Winter, and David S. Bradford
618 Progressive Scoliosis Following Chest Wall Resection in Children
G. Paul DeRosa
623 Segmental Spinal Instrumentation in Idiopathic Scoliosis: A Preliminary Report
George H. Thompson, R. Geoffrey Wilber, John W. Shaffer, Peter V. Scoles, and Clyde L. Nash, Jr.
631 The Management of Burst Fractures of the Thoracic and Lumbar Spine: Experience in 53 Patients
Richard D. McEvoy and David S. Bradford

638 Ultrastructure of the Nucleus Pulposus in the Intervertebral Disc After Systemic Administration of Hydrocortisone in Mice
Masanori Higuchi and Kazuhiro Abe
644 The Relationship Between Anthropometric, Postural, Muscular, and Mobility Characteristics of Males Ages 18–55
M. H. Pope, Thomas Bevins, David G. Wilder, and J. W. Frymoyer
649 Reduction of Postoperative Pain Parameters by Presurgical Relaxation Instructions for Spinal Pain Patients
G. Frank Lawlis, David Selby, Donald Hinnant, and C. Edward McCoy
652 The Radiographic Evaluation of the Symptomatic Postoperative Lumbar Spine Patient
Sharon E. Byrd, Major L. Cohn, Samuel L. Biggers, Charlotte T. Huntington, George E. Locke, and Michael F. Charles
662 Pedicle Fat Grafts for the Prevention of Scar in Low-Back Surgery: A Preliminary Report on the First 92 Cases
Gerald G. Gill, Max Scheck, Edward T. Kelley, and Juan J. Rodrigo
668 Degenerative Spondylolisthesis: Its Surgical Management
Bruce E. Dall and Dale E. Rowe
673 Repair of the Defect in Spondylolysis or Minimal Degrees of Spondylolisthesis by Segmental Wire Fixation and Bone Grafting
David S. Bradford and Jon Iza
680 Treatment of Spondyloptosis by Two Stage L5 Vertebrectomy and Reduction of L4 onto S1
Robert W. Gaines and W. Kirt Nichols
687 Meetings of Interest for Spine Physicians and Surgeons
689 Letters
690 Information for Authors

OCTOBER

691 Editorial: On CT Scanning and Metrizamide Myelography
696 Osteology of the Skull as It Affects Halo Pin Placement
Steven R. Garfin, Michael J. Botte, Ricardo S. Centeno, and Vernon L. Nickel
699 Cervical Angina: A Correlative Study with Emphasis on the Use of Coronary Arteriography
Alexander E. Brodsky
710 Choice of Surgical Treatment for Multisegmental Cervical Spondylotic Myelopathy
Kazuo Yonenobu, Takeshi Fuji, Keiro Ono, Kozo Okada, Tomio Yamamoto, and Norimasa Harada
717 Experimental Study on Postlaminectomy Deterioration of Cervical Spondylotic Myelopathy: Influence of Intradural Surgery and Persistent Spinal Block
Toshihisa Oiwa, Kiyoshi Hirabayashi, Mitsuyoshi Uzawa, and Tamio Ohira
722 A Technique of Posterior Cervical Fusion for Instability of the Cervical Spine
J. R. Davey, C. H. Rorabeck, S. I. Bailey, R. B. Bourne, and F. P. Dewar
729 Technical Improvements and Results of Laminoplasty for Compressive Myelopathy in the Cervical Spine
Tatsuo Itoh and Haruo Tsuji
737 Percutaneous Trephine Bone Biopsy of the Thoracic Spine
Charles A. Mick and James Zinreich
741 A Biomechanical Study of Thoracolumbar Spine Fractures with Bone in the Canal: Part III. Mechanical Properties of the Dura and Its Tethering Ligaments
A. F. Tencer, B. L. Allen, Jr., and R. L. Ferguson
748 The Use of Autografts for Vertebral Body Replacement in the Thoracic and Lumbar Spine
Howard B. Cotler, Jerome M. Cotler, Amy Stoloff, Herbert E. Cohn, Bruce E. Jerrell, Lucas Martinez, Bruce E. Northrup, Jewell L. Osterholm, and Francis E. Rosato

757 Quantification of Lumbar Function: Part I. Isometric and Multispeed Isokinetic Trunk Strength Measures in Sagittal and Axial Planes in Normal Subjects
S. S. Smith, T. G. Mayer, R. J. Gatchel, and T. J. Becker
765 Quantification of Lumbar Function: Part 2. Sagittal Plane Trunk Strength in Chronic Low-Back Pain Patients
Tom G. Mayer, Susan S. Smith, Janice Keeley, and Vert Mooney
773 Low-Back Impairment-Rating Practices of Orthopaedic Surgeons and Neurosurgeons in West Virginia
Judith Goodwin Greenwood
777 Intraspinal Narcotic Analgesia in the Treatment of Chronic Pain
Albert W. Auld, Anne Maki-Jokela, and D. M. Murdoch
782 Meetings of Interest for Spine Physicians and Surgeons
784 Information for Authors

NOVEMBER

785 Thoracic Idiopathic Scoliosis Curve Evolution and Prognosis
Rene Perdriolle and Jacques Vidal
792 Cyclic Axial Loading of Spinal Implants
Richard J. Nasca, Joseph M. Hollis, Jack E. Lemons, and Timothy A. Cool
797 Evaluation of Lumbar Lordosis: A Prospective and Retrospective Study
Robert Fernand and Daniel E. Fox
804 The Effects of Questionnaire Design on the Determination of End Results in Lumbar Spinal Surgery
James Howe and John W. Frymoyer
806 The Pathomorphology of Spinal Stenosis as Seen on CT Scans of the Lumbar Spine
Nils S. R. Schonstrom, Nicole-Francoise Bolender, and Dan M. Spengler
812 Surgical Findings and Results of Surgery After Failure of Chemonucleolysis
A. Deburge, J. Rocolle, and M. Benoist
816 Lumbar Paraspinal Compartment Syndrome: A Case Report with Physiologic and Anatomic Studies
Dan Carr, Lars Gilbertson, John Frymoyer, Martin Krag, and Malcolm Pope
821 Treatment of Degenerative Spondylolisthesis
Joseph S. Lombardi, Leon L. Wiltse, James Reynolds, Eric H. Widell, and Curtis Spencer III
828 Lateral Mass Fusion: A Prospective Study of a Consecutive Series with Long-Term Follow-Up
R. K. Jackson, D. A. Boston, and A. J. Edge
833 Efficacy of Spinal Manipulation/Mobilization Therapy: A Meta-Analysis
Kenneth Ottenbacher and Richard Difabio
838 Transverse Fracture of the Upper Sacrum: Suicidal Jumper's Fracture
Raymond Roy-Camille, Gérard Saillant, Gilles Gagna, and Christian Mazel
846 Briefly Noted: Cervical Spine Involvement in Sternocostoclavicular Hyperostosis
Charles S. Resnik and Albert M. Ammann
848 Briefly Noted: *Aspergillus Fumigatus* Osteomyelitis of the Thoracic Spine Treated by Excision and Interbody Fusion
Richard J. Nasca and Richard B. McElvein
851 Briefly Noted: S1–S2 Sacral Fracture Involving Neural Elements of the Cauda Equina: A Case Report and Review of the Literature
Thomas Dowling, Joseph A. Epstein, and Nancy E. Epstein
853 Briefly Noted: Lumbar Nerve Root Compression at the Site of Hook Insertion: Late Complication of Harrington Rod Instrumentation for Scoliosis
Markus Kornberg, William A. Herndon, and Glenn R. Rechtine
855 Briefly Noted: A Comparative Evaluation of Posterior Lumbar Interbody Fusion for Disc Disease
Berkley L. Rish

857 Briefly Noted: A Transverse Fracture Through the Body of the Axis: A Case Report
Neil J. Maki
860 Briefly Noted: Simplified Cervical Metrizamide Myelography: Decubitus Approach
Adam F. Petras, Lewis H. Westmoreland, and David F. Sobel
864 Meetings of Interest for Spine Physicians and Surgeons
866 Information for Authors

DECEMBER

867 Cervical Spine Disorders: A Comparison of Three Types of Traction
Ruth S. Zylbergold and Martha C. Piper
872 An Epidemiologic Study of the Relationship Between Postural Asymmetry in the Teen Years and Subsequent Back and Neck Pain
Gretchen S. Dieck, Jennifer L. Kelsey, Vijay K. Goel, Manohar M. Panjabi, Stephen D. Walter, and Mary H. Laprade
878 The Influence of Induced Hypotension and Spine Distraction on Canine Spinal Cord Blood Flow
Thomas F. Kling, Jr., Neil V. Fergusson, Andrew B. Leach, Robert N. Hensinger, Geoffrey A. Lane, and Paul R. Knight
884 Comparison of Evoked Spinal Potentials by Stimulation of the Sciatic Nerve and the Spinal Cord
Kazuhiko Satomi and Gregg I. Nishimoto
891 Free Vascularized Fibula Transfer for Stabilization of the Thoracolumbar Spine: A Case Report
Leonard F. Hubbard, James H. Herndon, and A. Robert Buonanno
894 Torsional Fatigue of the Lumbar Intervertebral Joints
Y. K. Liu, V. K. Goel, Alf Dejong, G. Njus, K. Nishiyama, and J. Buckwalter
901 The Posterior Surface of the Lumbar Vertebral Bodies: Part 2: An Anatomic Investigation Concerning the Curvatures in the Horizontal Plane
J. L. Larsen
907 Developmental Balloon Disc of the Lumbar Spine in Healthy Subjects
Haruo Tsuji, Tsutomu Yoshioka, and Hiroshi Sainoh
912 Quantification of Lumbar Function: Part 3: Preliminary Data on Isokinetic Torso Rotation Testing with Myoelectric Spectral Analysis in Normal and Low-Back Pain Subjects
Tom G. Mayer, Susan S. Smith, George Kondraske, Robert J. Gatchel, Timothy W. Carmichael, and Vert Mooney
921 Quantification of Lumbar Function: Part 4: Isometric and Isokinetic Lifting Simulation in Normal Subjects and Low-Back Dysfunction Patients
Nancy D. Kishino, Tom G. Mayer, Robert J. Gatchel, Margaret McCrate Parrish, Charles Anderson, Lorraine Gustin, and Vert Mooney
928 Ultrasound of the Spine in Focal Stenosis and Disc Disease
Juliette M. Engel, Gregory M. Engel, and Donald R. Gunn
932 Correlation of the MMPI with Lumbosacral Spine Fusion Results: Prospective Study
Robert S. Turner and W. C. Leiding
937 Treatment of Symptomatic Spondylolysis and Spondylolisthesis with the Modified Boston Brace
Mark E. Steiner and Lyle J. Micheli
944 Information for Authors
945 Index